

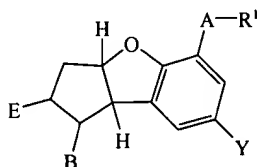
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-3 (Canceled).

✓ 1 Claim 4. (Previously Presented) A sustained-release pharmaceutical
2 composition comprising an ionic prostaglandin I₂ derivative of the following general formula (I):



3
4 and an ionic compound having an opposite charge to that of the ionic prostaglandin I₂ derivative
5 and increasing the oil/water partition coefficient of the ionic prostaglandin I₂ derivative,
6 wherein

7 R¹ represents COOR² (wherein R² represents:

- 8 1) hydrogen or a pharmacologically acceptable cation,
9 2) -Z-Ar¹, wherein Z is a valence bond or a straight or branched alkylene
10 shown by C_tH_{2t} wherein t is an integer of 1 to 6, and Ar¹ is 2-pyridyl, 3-
11 pyridyl or 4-pyridyl;
12 3) -C_tH_{2t}COOR³, wherein C_tH_{2t} has the same significance as defined above,
13 and R³ is hydrogen or a pharmacologically acceptable cation;
14 or,
15 4) -C_tH_{2t}N(R⁴)₂, wherein C_tH_{2t} has the same significance as defined above,
16 and R⁴ is hydrogen, a straight alkyl having 1 to 12 carbon atoms or a
17 branched alkyl having 3 to 14 carbon atoms);

18 A represents:

- 19 1) -(CH₂)_m-, wherein m is an integer of 1 to 3;
20 2) -CH=CH-CH₂;

- 21 3) $-\text{CH}_2-\text{CH}=\text{CH}-$;
22 4) $-\text{CH}_2-\text{O}-\text{CH}_2-$;
23 5) $-\text{CH}=\text{CH}-$;
24 6) $-\text{O}-\text{CH}_2-$; or,
25 7) $-\text{C}\equiv\text{C}-$;

26 Y represents hydrogen, an alkyl having 1 to 4 carbon atoms, chlorine, bromine, fluorine,
27 formyl, methoxy or nitro;

28 B represents $-\text{X}-\text{C}(\text{R}^5)(\text{R}^6)\text{OR}^7$ (wherein R^5 represents hydrogen or an alkyl having 1 to 4
29 carbon atoms; R^7 represents hydrogen, an acyl having 1 to 14 carbon atoms, an
30 aroyl having 6 to 15 carbon atoms, tetrahydropyranyl, tetrahydrofuranyl, 1-
31 ethoxyethyl or t-butyl; X represents:

- 32 1) $-\text{CH}_2-\text{CH}_2-$;
33 2) $-\text{CH}=\text{CH}-$; or
34 3) $-\text{C}\equiv\text{C}-$;

35 R^6 represents:

- 36 1) a straight alkyl having 1 to 12 carbon atoms or a branched alkyl having 3
37 to 14 carbon atoms;
38 2) $-\text{Z}-\text{Ar}^2$ wherein Z has the same significance as defined above and Ar^2 is
39 phenyl, α -naphthyl, β -naphthyl or a phenyl substituted with at least one of
40 chlorine, bromine, fluorine, iodine, trifluoromethyl, an alkyl having 1 to 4
41 carbon atoms, nitro, cyano, methoxy, phenyl or phenoxy;
42 3) $-\text{C}_t\text{H}_{2t}\text{OR}^8$, wherein C_tH_{2t} has the same significance as defined above, and
43 R^8 is a straight alkyl having 1 to 6 carbon atoms, a branched alkyl having
44 3 to 6 carbon atoms, phenyl, a phenyl substituted with at least one of
45 chlorine, bromine, fluorine, iodine, trifluoromethyl, an alkyl having 1 to 4
46 carbon atoms, nitro, cyano, methoxy, phenyl or phenoxy, cyclopentyl,
47 cyclohexyl, or a cyclopentyl or cyclohexyl substituted with 1 to 4 straight
48 alkyl group(s) having 1 to 4 carbon atoms;

- 49 4) $-Z-R^9$, wherein Z has the same significance as defined above, and R^9 is
50 hydrogen, a cycloalkyl having 3 to 12 carbon atoms or a substituted
51 cycloalkyl having 3 to 12 carbon atom which is substituted with 1 to 3
52 alkyl groups having 1 to 5 carbon atoms;
53 5) $-C_tH_{2t}-CH=C(R^{10})R^{11}$, wherein C_tH_{2t} has the same significance as defined
54 above, and R^{10} and R^{11} represent hydrogen, methyl, ethyl, propyl or butyl;
55 or
56 6) $-C_uH_{2u}-C\equiv C-R^{12}$, wherein u is an integer of 1 to 7, C_uH_{2u} is a straight or
57 branched alkylene and R^{12} is a straight alkyl having 1 to 6 carbon atoms);
58 E represents hydrogen or OR^{13} , wherein R^{13} is hydrogen, an acyl having 1 to 12 carbon
59 atoms, an aroyl having 7 to 18 carbon atoms, a straight alkyl having 1 to 12
60 carbon atoms or a branched alkyl having 3 to 14 carbon atoms; or a salt thereof.

1 Claim 5. (Canceled).

1 Claim 6. (Previously Presented) A sustained-release pharmaceutical
2 composition according to claim 4, wherein the ionic compound is incorporated at least in an
3 equimolar amount based on the ionic prostaglandin I_2 derivative in terms of a charge ratio.

1 Claim 7. (Currently Amended) A sustained-release pharmaceutical
2 composition according to claim 4, wherein the ionic prostaglandin ~~I_2 derivative~~ I_2 derivative is
3 anionic.

1 Claim 8. (Original) A sustained-release pharmaceutical composition
2 according to claim 7, wherein the ionic compound is a compound containing a group selected
3 from an ammonium, pyridinium, phosphonium and sulfonium group in the molecule thereof, or a
4 salt thereof.

1 Claim 9. (Original) A sustained-release pharmaceutical composition
2 according to claim 8, wherein the ionic compound contains at least one member selected from

3 the group consisting of an alkyl dimethylbenzylammonium salt, an alkyltrimethylammonium salt,
4 an alkylpyridinium salt, an alkylamine salt and an alkylphosphonium salt.

1 Claim 10. (Original) A sustained-release pharmaceutical composition
2 according to claim 9, wherein the ionic compound is benzalkonium chloride.

1 Claim 11. (Canceled).

1 Claim 12. (Previously Presented) A sustained-release pharmaceutical
2 composition according to claim 4, wherein the prostaglandin I₂ derivative is (+)-(1R*-2R*, 3aS*,
3 8bS*)-2,3,3a,8b-tetrahydro-2-hydroxy-1-[(E)-(3D*)-3-hydroxy-4-methyl-1-octen-6-ynyl]-1H-
4 cyclopenta[b]benzofuran-5-butanoic acid, or a salt thereof.

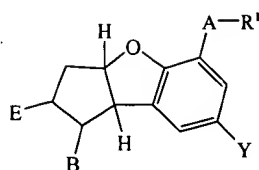
1 Claim 13. (Previously Presented) A sustained-release pharmaceutical
2 composition according to claim 4, wherein the ionic prostaglandin I₂ derivative is cationic.

1 Claim 14. (Original) A sustained-release pharmaceutical composition
2 according to claim 13, wherein the ionic compound is a compound containing a carboxyl,
3 sulfate, sulfonate or phosphate group in the molecule thereof, or a salt thereof.

1 Claim 15. (Original) A sustained-release pharmaceutical composition
2 according to claim 14, wherein the ionic compound is sodium lauryl sulfate and/or sodium
3 oleate.

1 Claim 16. (Canceled).

✓ 1 Claim 17. (Previously Presented) A sustained-release pharmaceutical
2 composition for a cationic ionic prostanoic acid derivative comprising an prostanoic acid *ed* *Not Really*
3 derivative and an ionic compound having an opposite charge to that of the ionic prostanoic acid
4 derivative and increasing hydrophobicity of the prostanoic acid derivative, wherein said ionic
5 compound contains a carboxyl, sulfate, sulfonate or phosphate group in the molecule thereof, or
6 a salt thereof, and wherein said prostaglandin I₂ derivative is of the formula:



wherein

R^1 represents COOR^2 (wherein R^2 represents:

- 1) hydrogen or a pharmacologically acceptable cation,
 - 2) $-\text{Z}-\text{Ar}^1$, wherein Z is a valence bond or a straight or branched alkylene shown by C_tH_{2t} wherein t is an integer of 1 to 6, and Ar^1 is 2-pyridyl, 3-pyridyl or 4-pyridyl;
 - 3) $-\text{C}_t\text{H}_{2t}\text{COOR}^3$, wherein C_tH_{2t} has the same significance as defined above, and R^3 is hydrogen or a pharmacologically acceptable cation;
- or,
- 4) $-\text{C}_t\text{H}_{2t}\text{N}(\text{R}^4)_2$, wherein C_tH_{2t} has the same significance as defined above, and R^4 is hydrogen, a straight alkyl having 1 to 12 carbon atoms or a branched alkyl having 3 to 14 carbon atoms);

A represents:

- 1) $-(\text{CH}_2)_m-$, wherein m is an integer of 1 to 3;
- 2) $-\text{CH}=\text{CH}-\text{CH}_2-$;
- 3) $-\text{CH}_2-\text{CH}=\text{CH}-$;
- 4) $-\text{CH}_2-\text{O}-\text{CH}_2-$;
- 5) $-\text{CH}=\text{CH}-$;
- 6) $-\text{O}-\text{CH}_2-$; or,
- 7) $\text{C}\equiv\text{C}-$;

Y represents hydrogen, an alkyl having 1 to 4 carbon atoms, chlorine, bromine, fluorine, formyl, methoxy or nitro;

B represents $-\text{X}-\text{C}(\text{R}^5)(\text{R}^6)\text{OR}^7$ (wherein R^5 represents hydrogen or an alkyl having 1 to 4 carbon atoms; R^7 represents hydrogen, an acyl having 1 to 14 carbon atoms, an

aroyl having 6 to 15 carbon atoms, tetrahydropyranyl, tetrahydrofuranyl, 1-ethoxyethyl or t-butyl; X represents:

- 1) $-\text{CH}_2-\text{CH}_2-$;
- 2) $-\text{CH}=\text{CH}-$; or
- 3) $-\text{C}\equiv\text{C}-$;

R^6 represents:

- 1) a straight alkyl having 1 to 12 carbon atoms or a branched alkyl having 3 to 14 carbon atoms;
- 2) $-\text{Z}-\text{Ar}^2$ wherein Z has the same significance as defined above and Ar^2 is phenyl, α -naphthyl, β -naphthyl or a phenyl substituted with at least one of chlorine, bromine, fluorine, iodine, trifluoromethyl, an alkyl having 1 to 4 carbon atoms, nitro, cyano, methoxy, phenyl or phenoxy;
- 3) $-\text{C}_t\text{H}_{2t}\text{OR}^8$, wherein C_tH_{2t} has the same significance as defined above, and R^8 is a straight alkyl having 1 to 6 carbon atoms, a branched alkyl having 3 to 6 carbon atoms, phenyl, a phenyl substituted with at least one of chlorine, bromine, fluorine, iodine, trifluoromethyl, an alkyl having 1 to 4 carbon atoms, nitro, cyano, methoxy, phenyl or phenoxy, cyclopentyl, cyclohexyl, or a cyclopentyl or cyclohexyl substituted with 1 to 4 straight alkyl group(s) having 1 to 4 carbon atoms;
- 4) $-\text{Z}-\text{R}^9$, wherein Z has the same significance as defined above, and R^9 is hydrogen, a cycloalkyl having 3 to 12 carbon atoms or a substituted cycloalkyl having 3 to 12 carbon atom which is substituted with 1 to 3 alkyl groups having 1 to 5 carbon atoms;
- 5) $-\text{C}_t\text{H}_{2t}-\text{CH}=\text{C}(\text{R}^{10})\text{R}^{11}$, wherein C_tH_{2t} has the same significance as defined above, and R^{10} and R^{11} represent hydrogen, methyl, ethyl, propyl or butyl; or
- 6) $-\text{C}_u\text{H}_{2u}-\text{C}\equiv\text{C}-\text{R}^{12}$, wherein u is an integer of 1 to 7, C_uH_{2u} is a straight or branched alkylene and R^{12} is a straight alkyl having 1 to 6 carbon atoms);

60 E represents hydrogen or OR^{13} , wherein R^{13} is hydrogen, an acyl having 1 to 12 carbon
61 atoms, an aroyl having 7 to 18 carbon atoms, a straight alkyl having 1 to 12
62 carbon atoms or a branched alkyl having 3 to 14 carbon atoms; or a salt thereof.

1 Claim 18. (Previously Presented) A sustained-release pharmaceutical
2 composition according to claim 17, wherein the ionic compound is sodium lauryl sulfate and/or
3 sodium oleate.